

WHAT IS CLAIMED IS:

1. An apparatus for fabricating a plasma display panel, said apparatus forming a protection film on a substrate of a plasma display panel in a display
5 area, comprising:

(a) a vacuum chamber;

(b) a feeder which feeds said substrate in a first direction in said vacuum chamber; and

(c) a plurality of evaporation sources located in alignment with said display
10 area of said substrate when said substrate is in a film-forming position,

wherein at least one of said evaporation sources is located outside said display area in a second direction perpendicular to said first direction.

2. An apparatus for fabricating a plasma display panel, said apparatus
15 forming a protection film on a substrate of a plasma display panel in a display area, comprising:

(a) a vacuum chamber;

(b) a feeder which feeds said substrate in a first direction in said vacuum chamber; and

(c) a plurality of evaporation sources located in alignment with said display
20 area of said substrate when said substrate is in a film-forming position,

wherein at least one of said evaporation sources is located in each of first areas defined as areas extending from edges of a maximum substrate among substrates being able to be fed by said feeder which edges extend in said first
25 direction, inwardly of said substrate by a predetermined length in a second direction perpendicular to said first direction.

3. The apparatus as set forth in claim 2, wherein said predetermined length is equal to 40 mm.

4. The apparatus as set forth in claim 2, wherein said at least one of said evaporation sources is located outside said first area in said second direction.

5 5. The apparatus as set forth in claim 2, wherein said protection film is formed by vacuum evaporation.

6. The apparatus as set forth in claim 5, further comprising an electron gun which irradiates electron beams to said evaporation sources for heating and
10 evaporating said evaporation sources.

7. The apparatus as set forth in claim 2, wherein an angle defined by a first line and a second line is equal to or smaller than 80 degrees wherein said first line is defined as a line, when said substrate is in said film-forming position,
15 connecting each of said at least one of said evaporation sources to a point on each of lines extending in the first direction at a distance of said predetermined length from said edges of said substrate which point is closest to each of said at least one of said evaporation sources, and said second line is defined as a line extending in said second direction from said at least one of said evaporation sources.

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8. The apparatus as set forth in claim 2, wherein an angle defined by a first line and a second line is equal to or smaller than 80 degrees wherein said first line is defined as a line, when said substrate is in said film-forming position, connecting each of said at least one of said evaporation sources to a point on said
25 substrate which point is closest to each of said at least one of said evaporation sources, and said second line is defined as a line extending in said second direction from said at least one of said evaporation sources.

9. The apparatus as set forth in claim 2, wherein a distance between said

evaporation sources and said substrate may be selected from a plurality of distances different from one another, and, assuming that said display area has a length A or B ($A > B$) in said second direction, a distance selected when said display area has a length B is equal to or smaller than a distance selected when
5 said display area has a length A.

10 10. The apparatus as set forth in claim 2, wherein each of said evaporation sources is comprised of magnesium oxide, and said apparatus forms a protection film comprised of a magnesium oxide film.

11. The apparatus as set forth in claim 10, wherein said magnesium oxide film has a face-centered cubic structure (fcc).

15 12. The apparatus as set forth in claim 10, wherein said magnesium oxide film has a (111)-aligned surface.

13. An apparatus for fabricating a plasma display panel, said apparatus forming a protection film on a substrate of a plasma display panel in a display area, comprising:

20 (a) a vacuum chamber;

(b) a feeder which feeds said substrate in a first direction in said vacuum chamber;

(c) a plurality of evaporation sources located in alignment with said display area of said substrate when said substrate is in a film-forming position; and

25 (d) a mask positioned between said substrate and said evaporation sources, and having an opening in alignment with said display area,

wherein at least one of said evaporation sources is located outside said opening in a second direction perpendicular to said first direction and parallel with a surface of said substrate.

14. The apparatus as set forth in claim 13, wherein said protection film is formed by vacuum evaporation.

5 15. The apparatus as set forth in claim 14, further comprising an electron gun which irradiates electron beams to said evaporation sources for heating and evaporating said evaporation sources.

10 16. The apparatus as set forth in claim 13, wherein an angle defined by a first line and a second line is equal to or smaller than 80 degrees wherein said first line is defined as a line connecting each of evaporation sources located outermost in said second direction among said evaporation sources, to a point in said opening which point is closest to said each of evaporation sources, and said second line is defined as a line extending in said second direction from said each
15 of evaporation sources.

17. The apparatus as set forth in claim 13, wherein a distance between said evaporation sources and said substrate may be selected from a plurality of distances different from one another, and, assuming that said display area has a
20 length A or B ($A > B$) in said second direction, a distance selected when said display area has a length B is equal to or smaller than a distance selected when said display area has a length A.

25 18. The apparatus as set forth in claim 13, wherein each of said evaporation sources is comprised of magnesium oxide, and said apparatus forms a protection film comprised of a magnesium oxide film.

19. The apparatus as set forth in claim 18, wherein said magnesium oxide film has a face-centered cubic structure (fcc).

20. The apparatus as set forth in claim 18, wherein said magnesium oxide film has a (111)-aligned surface.

5 21. A method of fabricating a plasma display panel, including the step of forming a protection film on a substrate of said plasma display panel in a display area, said step includes:

(a) feeding said substrate in a first direction in a vacuum atmosphere; and

10 (b) heating and evaporating a plurality of evaporation sources at least one of which is located outside said display area in a second direction perpendicular to said first direction, said evaporation sources being positioned facing said display area of said substrate.

15 22. The method as set forth in claim 21, wherein said protection film is formed by vacuum evaporation.

20 23. The method as set forth in claim 21, wherein an angle defined by a first line and a second line is equal to or smaller than 80 degrees wherein said first line is defined as a line connecting each of said at least one of said evaporation sources located outside said display area in said second direction among said evaporation sources, to a point in said display area which point is closest to said at least one of said evaporation sources, and said second line is defined as a line extending in said second direction from said at least one of said evaporation sources.

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24. The method as set forth in claim 21, wherein said substrate has at least two display areas each having a size of 50-size or greater.

25. The method as set forth in claim 21, wherein said substrate has at least

three display areas.

26. The method as set forth in claim 21, wherein said display area has a size of 55-size or greater.

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27. The method as set forth in claim 21, wherein said display area has a size of 60-size or greater.